

CLAIMS

1. A process for producing sulfide glass or sulfide glass ceramic each capable of conducting a lithium ion, comprising subjecting metallic lithium, sulfur as a simple substance and phosphorus as a simple substance as starting raw materials, which constitute said sulfide glass and sulfide glass ceramic, to mechanical milling to thereby convert them into sulfide glass or sulfide glass ceramic.
2. The process for producing sulfide glass or sulfide glass ceramic each capable of conducting a lithium ion according to Claim 1, wherein the simple element further comprises at least one element selected from the group consisting of metallic germanium, metallic aluminum, metallic iron, metallic zinc, silicon as a simple substance and boron as a simple substance.
3. The process for producing sulfide glass or sulfide glass ceramic each capable of conducting a lithium ion according to Claim 1, wherein the metallic lithium is replaced in part or in whole with lithium sulfide.
4. The process for producing sulfide glass ceramic capable of conducting a lithium ion according to Claim 1, wherein the sulfide glass which has been vitrified by the above-stated mechanical milling is calcined at the glass transition temperature thereof or higher.
5. The process for producing sulfide glass ceramic capable of conducting a lithium ion according to Claim 4, wherein the above-stated sulfide glass is calcined at 150°C or higher.
6. The process for producing sulfide glass ceramic capable

of conducting a lithium ion according to Claim 4, wherein the above-stated sulfide glass is calcined under vacuum or in the presence of an inert gas.

7. The process for producing sulfide glass or sulfide glass ceramic each capable of conducting a lithium ion according to Claim 1, wherein the decomposition voltage of any of the above-stated sulfide glass and sulfide glass ceramic is at least 3 V.

8. A whole solid type cell which comprises using, as a solid electrolyte, the sulfide glass or sulfide glass ceramic each being produced by the process as set forth in Claim 1.